

URL SHORTNER SERVICE

- API Endpoints - URL Operations -

1. Create Short URL - Creates a new shortURL from JSON input containing values longURL and CustomAlias which is optional. Returns the response containing the shortURL, qrCode and created date.

```
POST /api/urls
```

2. List URLs - Retrieves the list of short URLs

```
GET /api/urls
```

3. GET URL Details - Retrieves the details of a particular short URL.

```
GET /api/urls/:code
```

4. Delete URL - Deletes a short URL

```
DELETE /api/urls/:code
```

Analytics -

1. Get URL Statistics - Retrieves the statistics of a particular short URL.

```
GET /api/urls/:code/stats
```

2. Get a QR Code - Returns the QR Code for a particular short URL.

```
GET /api/urls/:code/qr
```

- Error Codes -

1. HTTP 400 - Bad Requests.
2. HTTP 500 - Internal Server Error.
3. HTTP 404 - Not Found
4. HTTP 200 - OK

- Rate limits -

1. The API's are rate-limited to a specific number of requests per minute.
2. This helps prevent excessive resource usage and ensures fair API usage
3. On exceeding the req/min limit, it throws an Error (429 - Too many requests).

- Setup guide -

Prerequisites -

Before you begin, ensure you have the following installed:

- Python 3.8+
- MongoDB (for storing tasks and extraction information)
- Redis (for caching frequently accessed URLs and storing Rate Limiting counter)

1. Clone the Repository and create a virtual environment

```
git clone https://github.com/yourusername/URL-Shortner.git
python -m venv venv
venv\Scripts\activate
cd URL Shortner Service
```

2. Install Dependencies

```
pip install -r requirements.txt
```

3. Create a .env file in the root repository with the following content
Add the localhost strong on MongoDB

```
MONGO_URI
```

4. Start the Backend server and spin a Redis server locally.

```
uvicorn app.main:app --reload  
redis-server (localhost)
```

The Swagger UI docs will be accessible at <http://127.0.0.1:8000/docs> for testing.

Example requests/responses –

LIST URLS

Response:

```
[
  {
    "shortUrl": "127.0.0.1:8000/CubsZ2Ze9Z",
    "longUrl": "https://example.com/",
    "qrCode": "",
    "created": "2024-12-08T16:27:30.153000"
  },
  {
    "shortUrl": "127.0.0.1:8000/Cubwrs60tQ",
    "longUrl": "https://drive.google.com/file/d/1BG0JLwBSFEV8DU8kNGUxDpwh_rOn377u/view",
    "qrCode": "",
    "created": "2024-12-08T21:58:16.983000"
  }
]
```



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CREATE SHORT URL

Request:

```
{
  "longUrl":
  "https://drive.google.com/file/d/1BG0JLwBSFEV8DU8kNGUxDpwh_rOn377u/view",
  "customAlias": "autoflow"
}
```

Response:

```
{
  "shortUrl": "127.0.0.1:8000/autoflow",
  "qrCode":
  "
```

```
ExeDETVR/RbdW8dAq7eM/s2UTol0dAjmAHRqbewYWh1d0U5QWv6zkU4kC
5CG2eeEh0HXWcYcoL+2iJiGa1A6ZaAE99Zh0CUT5hYCa9SlefKcVg8dB72Z
ZVisV6wZUbrJ4o8BUQa/HR8Pna2ttpZuRRqWDvYSAY7+udZZxvpS+ozRXw
PxvITFLQU4+jT6vjuWLMztqIGWVfK4uQBHn0HX3TH0ko0l0PKGpjqlOo7W/x
i9yYTE3KkFw/vyTHhU9D2815dXZ4cvFODor+vTpj+d2l8yIL5NQPkq21KAo39
336q743gJiDJg8RIm4vvP4u5aHV1HFkCdW+S7vhXX7Zf3rf3Rj7tjwfRhZ+xzQ
kcdddRRRW+D/gTp/QkFPpYeYQAAAABJRu5ErkJggg==",
  "created": "2024-12-08T23:44:02.189808"
}
```

GET URL DETAILS

Request:

/api/urls/autoflow

Response:

```
{
  "shortUrl": "127.0.0.1:8000/autoflow",
  "longUrl":
    "https://drive.google.com/file/d/1BG0JLwBSFEV8DU8kNGUxDpwh_rOn377
    u/view",
  "qrCode":
    "
    AAABTUiuoAAACEUIEQVR4nO2awY3bMBBF30QEcpQ6SCIUB4pNaUDsx
    QXYIA8LiDh50BKa+8iiZ1Al0DMHAYBfocPCN/zOWMTD1b68igJjrrqqKOOOro
    laq0CJAuYDQBIOR43F+DoM2iUJGWw7xmKs8BGOkmS7tFtBDj6DFoWC6U
    BoH8zAKrfXiHA0QcqfDrprwZ9FpRXCHD0H1DpEtAZsHEXAY7+phZv9aKZq
    T6FCYDbu/PuWh1taDlZswFsLKFGDWCukfAVAhx9pKq3bi3UT4gCuj8+gFZH
    qRm9Jfiuvh+d60en+iRJOu+u1dHWt5IB9BNAN1nMA9Bn7AbdXaujzTjKXb0d
    ExeDETVR/RbdW8dAq7eM/s2UTol0dAjmAHRqbewYWh1d0U5QWv6zkU4kC
    5CG2eeEh0HXWcYcoL+2iJiGa1A6ZaAE99Zh0CUT5hYCa9SlefKcVg8dB72Z
    ZVisV6wZUbrJ4o8BUQa/HR8Pna2ttpZuRRqWDvYSAY7+udZZxvpS+ozRXw
    PxvITFLQU4+jT6vjuWLMztqIGWVfK4uQBHn0HX3TH0ko0l0PKGpjqlOo7W/x
    i9yYTE3KkFw/vyTHhU9D2815dXZ4cvFODor+vTpj+d2l8yIL5NQPkq21KAo39
    336q743gJiDJg8RIm4vvP4u5aHV1HFkCdW+S7vhXX7Zf3rf3Rj7tjwfRhZ+xzQ
    kcdddRRRW+D/gTp/QkFPpYeYQAAAABJRu5ErkJggg==",
  "created": "2024-12-08T18:26:24.792000"}
```

DELETE URL

Request:

/api/urls/CubsZ2Ze9Z

Response:

```
{  
  "message": "URL with code: CubsZ2Ze9Z deleted successfully"  
}
```

GET URL STATISTICS

Request:

/api/urls/Cubwrs60tQ/stats

Response:

```
{  
  "longUrl":  
    "https://drive.google.com/file/d/1BG0JLwBSFEV8DU8kNGUxDpwh_rOn377u/view",  
  "shortUrl": "127.0.0.1:8000/Cubwrs60tQ",  
  "clicks": 6,  
  "created": "2024-12-09T03:28:16.983000",  
  "analytics": {  
    "device_clicks": {  
      "pc": 6  
    },  
    "browser_clicks": {  
      "edge": 2,  
      "chrome": 1,  
      "firefox": 3  
    },  
    "lastAccessed": "2024-12-09T00:06:45.358000"  
  }  
}
```

GET QR CODE

Request:

/api/urls/Cubwrs60tQ/qr

Response:

```
{
  "shortUrl": "127.0.0.1:8000/Cubwrs60tQ",
  "longUrl":
    "https://drive.google.com/file/d/1BG0JLwBSFEV8DU8kNGUxDpwh_rOn377u/view",
  "qrCode":
    "
    AAABTUiuoAAACFEIEQVR4nO2ZTYrjMBCFvxozEqIADpCjyDfolw1zM+soO
    UCDvQwovFI6s5kZsBpcOJF1cZO/C0eiFL9PBMrl/9YS4KjjrqqKOObolaiwEb
    lwGymdm49L/HzQU4uiqG+kgTwHJE+VSwNB+LQSgA2JYCHP0GuvQUSmc
    ziBfTBJjZ8BwBjn4DtZEg/fo6o2cLcPRxNBZsfKUAR/8VPYeigAWAqynNyAB
    uZ+eXa3W0odnMzA4ABNXGEK61JXyGAEfXRM2tmxTKp0s/nvjnVurlWh1Fk
    kSSRJoBCKoxARDbV00v1+por1vLAeWT6mxIxBkjfgzAddCWAhx9OLekGY
    AgIEhTLGiqX0tDPLd2g+ZTAWJBU7wYaW7nRrYBG7cX4Oiq6HWrolkgTYT2
    U3OQNAevW7tBP+vWUSRdTcQZ5cMH5PfaHZrXrb2gvW7VJrAlk6ZYJax6H
    Vrf+jSdrk2AvbzPADxYrC86Q7dRoCjK6LehAahWDq/CbgYElqxtGvSqp/ycq2
    O3t6EklonSCy0idk7+N2hX97x7f1XXWT3t3aHpj4iS+cBSRerCdYm5s0FOPol2
    r1jG6NUcyubWd8dbi/A0RVx7xErWyjk94Lq7vCA4V3GXtE0X400X83Gz3lreq
    YAR/8ff3nHeQRLU1DbHS7eZewHpfftAASR5u5vtb08+J5wL+i9dywo/d29Y0c
    dddRRR/eG/gbhACihMoy/jQAAAABJRU5ErkJggg=="
}
```